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An Investigation into Poverty, Educational Attainment and Outcomes in Ghana

Ghana Working Paper (Meta Analysis) Series¹

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1.0. Introduction

This paper provides a preliminary survey of the educational attainment of Ghana's adult population. It describes patterns and trends and makes some allusions to possible

¹ The Ghana Working Paper/Meta Analysis Series forms part of the research outputs for the Research Consortium on Outcomes to Education and Poverty (RECOUP) supported by the Department for International Development (DfID). RECOUP is a research consortium conducting research on educational outcomes and poverty across four countries: Ghana, Kenya, India and Pakistan. The research consortium is led by the University of Cambridge, UK. Associates for Change is a research and consulting firm based in Ghana and is the lead organisation working on RECOUP research in Ghana. The views expressed in this study do not necessarily reflect those of RECOUP and /or DFID.

associations between educational attainment and outputs and outcomes. More rigorous investigations into causal relations will be the subject of further research.

The analysis is conducted using the Core Welfare Indicators Questionnaire (CWIQ) survey that was conducted in 2003. The CWIQ is a nationally representative household survey covering about 49,000 households and 170,100 individuals. A shortcoming of the CWIQ survey is that it does not contain earnings, income or expenditure modules. It is the preferred data set, however, for this analysis because the fourth Ghana Living Standards Survey conducted in 1998/99 may be considered old and the EMIS data set of the Ministry of Education and Sports contains only school information.

The next section presents a brief discussion on Ghana's education system. This is followed by section 3, a profile of the educational attainment of the population aged 15 years and above. Section 4 contains a descriptive analysis of educational attainment and some output and outcome indicators. In particular the section will examine adult literacy, employment, unemployment and health. Section 5 concludes the paper.

2.0. Ghana's Education System

The education reforms introduced in 1987 changed the structure of the education system. The structure of the education system before the reforms was such that to complete pre-university education could take between 13 and 15 years². This variation in the minimum number of years was because there was essentially a three-track system in place. Children who managed to complete primary schooling could take the middle school track and end their education after completing four years of middle school. It was possible to skip middle school and enter secondary school after sitting the common entrance examination in primary 6. The alternative was to do one or two years at middle school before sitting for the entrance examination to secondary school. Secondary school education could be completed after the Ordinary Level (O Level) General Certificate Examination. The Advanced Level (A Level) General Certificate Examination was taken after an additional two years of secondary education. The results of the A Level GCE examination were an entry requirement into university.

The reforms replaced the three-track system with a one-track system. All children are expected to go through a minimum of nine years of basic education, i.e. six years of primary and three years of junior secondary education. The basic education certificate examination is taken at the end of the third year of junior secondary and is the first terminal point of the education system. At the end of junior secondary students can either enter the world of work or continue to the secondary level. The results of this examination determine entry into senior secondary education.

² Some changes had occurred in the education system prior to the 1987 reforms. During the colonial era entry into secondary school was only possible after completing middle school. A change was made when it was possible to enter secondary school after completing two years of middle school. By the 1960s with the establishment of preparatory schools it was possible to enter secondary school after 6 years of primary education.

The reforms of 1987 replaced the O Level and A Level system with senior secondary schools. Senior secondary education is for a period of three years and comprises of secondary schools providing general education, technical schools, vocational schools, commercial schools and agriculture colleges. The second terminal point of the current education system occurs at the end of the three years of senior secondary education. Tertiary education consists of teacher training colleges, universities and polytechnics.

3.0. Educational Attainment Profile of the Population Aged 15 years and Above

About a third of the population aged 15 years and above in 2003 had never attended school (Table 1a). The proportion is significantly higher for women compared to men. The proportion of the rural population that has never attended school is almost twice that of the urban population.

Table 1a. Educational Attainment for the Population aged 15 years and above (%), 2003

Level of Education Attained	All	Women	Men	Rural	Urban
Never attended school	33.90	42.31	24.52	45.21	20.41
Attended school but did not complete any level	0.03	0.02	0.03	0.03	0.01
Completed Pre-school	0.06	0.05	0.06	0.09	0.02
Incomplete Primary	7.15	7.49	6.78	8.88	5.10
Completed Primary school	4.70	5.01	4.36	5.16	4.16
Incomplete Junior Secondary	6.37	5.97	6.82	6.36	6.39
Completed Junior Secondary	12.11	11.35	12.96	10.34	14.22
Incomplete Middle School	3.26	3.72	2.74	3.39	3.11
Completed Middle school	15.21	11.98	18.80	12.76	18.13
Incomplete Senior Secondary	2.54	2.07	3.18	1.48	3.92
Completed SSS	4.69	3.45	6.07	1.97	7.94
Incomplete O Level	0.61	0.51	0.82	0.41	0.94
Completed O Level	1.71	0.95	2.56	0.77	2.83
Completed Vocational/Technical/Commercial	3.04	2.43	3.71	1.31	5.11
Completed Nursing/Teacher Training	1.58	1.37	1.81	1.08	2.19
Incomplete A Level	0.12	0.07	0.18	0.04	0.22
Completed A Level	0.67	0.28	1.09	0.17	1.26
Completed Tertiary	2.07	0.85	3.44	0.51	3.95

Notes:

The sample in this table is the population aged 15 years and above and includes persons in school at the time of the survey.

Source: Calculated by the author using CWIQ 2003

A comparison between 1998 and 2003 suggests there has been no significant change in the population aged 15 years and above that has never attended school (Tables 1a and 1b). The rural urban gap did not reduce during this period. Comparison of the information in tables 1a and 1b must be done with some caution. This is because the 1998/99 does not differentiate between people who have not completed a level of education and those who have. Thus some people who may have completed primary school for example may have been in middle school at the time of the survey in 1998/99. This caveat notwithstanding the proportion of tertiary completers increased quite significantly between 1998/99 and 2003.

Table 1b Educational Attainment of Population Aged 15 years and above (%), 1998

	All	Men	Women	Urban	Rural
Never Been to School	31.25	20.80	40.38	19.80	37.65
Went to school but did not Complete any Level	3.94	3.91	3.97	2.41	4.80
Completed Pre-School	6.03	5.14	6.80	4.43	6.92
Completed Primary	15.00	15.14	14.88	14.25	15.42
Completed Middle School	19.36	23.39	15.83	23.34	17.13
Completed Junior Secondary	11.94	13.72	10.38	14.36	10.59
Completed Senior Secondary	2.72	4.06	1.55	3.95	2.03
Completed Vocational/Commercial School	1.17	0.78	1.50	2.44	0.45
Completed O Level	2.86	4.12	1.76	5.01	1.66
Completed A Level	0.90	1.47	0.41	2.22	0.16
Completed Teacher Training	0.89	1.08	0.73	1.09	0.78
Completed Technical	1.08	2.26	0.06	2.30	0.40
Completed Post-Sec Teacher Training	0.54	0.86	0.25	0.62	0.49
Completed Nursing	0.12	0.06	0.16	0.22	0.06
Completed Post Sec Nursing	0.07	0.06	0.08	0.10	0.05
Completed Tertiary	0.53	0.87	0.24	1.02	0.26
Koranic	0.96	1.11	0.83	1.33	0.75
Other	0.17	0.26	0.08	0.20	0.15

Source: Ghana Statistical Service, *Ghana Living Standards Survey, 1998/99*, Accra.

Notes: The sample in this table is the population aged 15 years and above and includes persons in school at the time of the survey.

Table 1c Educational Attainment by Wealth Quintile

	Lowest	Second	Third	Fourth	Highest
Never been to school	0.604	0.371	0.282	0.244	0.253
Completed Pre-school	0.001	0.001	0.000	0.000	0.000
Did not complete Primary	0.090	0.094	0.074	0.060	0.050
Completed Primary	0.044	0.054	0.051	0.046	0.041
Did not complete Junior Secondary	0.060	0.079	0.076	0.064	0.045
Completed Junior Secondary	0.071	0.121	0.136	0.140	0.128
Did not complete Middle School	0.020	0.037	0.035	0.035	0.035
Completed Middle School	0.064	0.141	0.167	0.184	0.184
Completed Vocational/Technical School	0.006	0.015	0.031	0.043	0.049
Did not Complete Senior Secondary	0.013	0.025	0.033	0.032	0.026
Did not complete O Level	0.002	0.004	0.006	0.009	0.011
Completed Senior Secondary	0.016	0.031	0.054	0.061	0.064
Completed O Level	0.003	0.009	0.016	0.023	0.029
Did not complete A Level	0.000	0.000	0.001	0.002	0.003
Completed A Level	0.001	0.002	0.006	0.009	0.014
Completed Nursing/Teacher Training	0.004	0.010	0.015	0.019	0.027
Completed Tertiary	0.001	0.005	0.018	0.031	0.040

Source: Calculated by the author using CWIQ 2003

Table 1d Educational Attainment by Region, 2003 (%)

Educational Attainment	Greater					Brong		Upper	
	Western	Central	Accra	Volta	Eastern	Ashanti	Ahafo	Northern	West
Never been to school	29.89	31.01	14.06	34.33	25.72	23.79	38.06	73.44	71.59
Completed Pre-school	0.03	0.13	0.04	0.08	0.07	0.05	0.02	0.02	0.04
Did not complete Primary	7.27	9.31	4.69	9.76	9.11	6.54	8.47	5.08	4.45
Completed Primary	5.13	5.77	4.06	6.15	6.29	4.63	5.76	1.97	2.15
Did not complete Junior Secondary	6.96	7.63	5.01	7.34	7.45	7.36	7.37	3.44	4.19
Completed Junior Secondary	13.42	13.07	14.42	11.44	13.14	16.38	12.05	3.20	3.27
Did not complete Middle School	4.11	3.37	3.11	3.92	5.11	3.95	2.93	0.44	0.61
Completed Middle School	17.71	15.37	20.29	14.02	19.27	19.52	13.65	2.27	2.78
Completed Vocational/Technical School	2.88	2.75	6.81	2.08	2.76	2.86	1.72	1.23	1.95
Did not Complete Senior Secondary	2.28	2.03	3.87	2.25	2.23	3.07	2.28	1.95	1.52
Did not complete O Level	0.53	0.63	1.44	0.47	0.53	0.77	0.40	0.10	0.17
Completed Senior Secondary	3.77	3.67	9.05	3.90	3.36	5.06	3.17	3.29	3.47
Completed O Level	1.74	1.33	3.86	0.90	1.40	1.81	1.09	0.80	0.78
Did not complete A Level	0.09	0.03	0.42	0.11	0.08	0.06	0.03	0.02	0.03
Completed A Level	0.41	0.48	2.05	0.31	0.32	0.77	0.23	0.16	0.07
Completed Nursing/Teacher Training	1.30	1.70	1.65	1.69	1.68	1.65	1.71	1.20	1.90
Completed Tertiary	2.43	1.68	5.14	1.18	1.42	1.68	1.05	1.05	0.99

Source: Calculated by the author using CWIQ 2003

Table 1e Educational Attainment by Region, 1998/99 (%)

	Greater					Brong		Upper	
	Western	Central	Accra	Volta	Eastern	Ashanti	Ahafo	Northern	West
Never Been to School	24.84	32.91	14.36	29.84	25.07	20.02	27.72	65.51	73.71
Went to school but did not Complete any L	2.27	5.49	1.42	3.16	6.54	2.76	6.53	4.55	3.06
Completed Pre-School	6.42	12.12	3.09	8.37	4.37	8.27	3.66	3.22	3.87
Completed Primary	17.65	17.15	13.78	17.56	17.86	15.27	18.51	8.03	4.90
Completed Middle School	24.22	16.24	24.54	16.28	23.22	26.48	22.72	3.53	3.71
Completed Junior Secondary	13.05	9.93	14.75	13.57	12.60	14.11	13.37	4.45	6.05
Completed Senior Secondary	2.81	1.46	3.61	2.65	2.82	3.19	1.81	3.79	1.59
Completed Vocational/Technical School	1.10	0.98	4.11	0.72	0.90	0.82	0.42	0.20	0.39
Completed O Level	2.68	1.20	7.36	2.19	2.36	3.50	1.34	1.16	0.64
Completed A Level	0.40	0.30	4.16	0.29	0.52	0.72	0.16	0.03	0.58
Completed Teacher Training	1.38	0.29	0.74	0.95	1.42	0.89	0.72	0.42	0.47
Completed Technical	1.10	0.69	3.42	0.84	0.50	1.37	0.42	0.00	0.39
Completed Post-Sec Teacher Training	0.43	0.16	0.42	1.10	0.59	0.34	1.39	0.24	0.00
Completed Nursing	0.06	0.06	0.17	0.32	0.15	0.00	0.00	0.09	0.00
Completed Post Sec Nursing	0.07	0.00	0.05	0.06	0.12	0.10	0.12	0.00	0.19
Completed Tertiary	0.77	0.32	1.45	0.28	0.12	0.24	0.78	0.28	0.26
Koranic	0.12	0.19	0.57	1.19	0.39	1.41	0.33	4.02	0.20
Other	0.21	0.31	0.41	0.21	0.07	0.07	0.00	0.17	0.00

Source: Ghana Statistical Service, *Ghana Living Standards Survey, 1998/99*, Accra.

About 60% of the population aged 15 years and above living in households in the lowest welfare quintile have never attended school compared to 25% in the highest welfare quintile (Table 1c).³ A clear pattern is evident between welfare quintile and educational attainment. The level of educational attainment of household members increases from the lowest to the two highest welfare quintiles. A higher proportion of persons from households in the two highest welfare quintiles are likely to have completed levels of education above middle school than persons in the lowest two welfare quintiles (Table 1c).

The Upper East, Upper West and Northern Regions are the least well endowed in terms of educational endowment of its population aged 15 years and above. The Greater Accra region is the most well-endowed of the ten regions (Table 1d and 1e). This can be explained partly by the capital city effect. Being the capital city of the country it is the centre for industry, government business, finance and other activities. It will therefore

³ The welfare quintiles have been developed by the Ghana Statistical Services using variables that are close correlates of poverty. The poverty correlates that make up the welfare measure include household expenditure based on five key items, an asset score based on the ownership of eight different items, a dependency variable (the latter was included only for the rural estimates of the welfare measure), an ecological zone indicator and indicators of dwelling amenities.

attract well trained personnel as well as the less well-trained seeking for job opportunities. The observed increase in the proportion of adults that have never attended school cuts across all regions with the exception of the Upper East and Central regions.

About half of the population aged 15 years and above have less than nine years of education in 2003. Excluding those that have never attended school, the level of education that the single largest segment of the population aged 15 years and over completed was middle school, i.e. they had completed four years of middle school education. A lower proportion of women aged 15 years and above had completed middle school compared to men. Less than 2% of the population had completed nursing/teacher training whilst about 2% had completed tertiary education. Less than 1% of women completed tertiary compared to over 3% of men. Approximately 88% of women aged 15 years and above had attained middle school leaving certificate or less. Of this group about half had never attended school. This contrasts with 77% of men who had the middle school leaving certificate or less. A significantly lower percentage of the rural compared to the urban population has completed either junior secondary school or middle school.

Ghana has not been successful in retaining graduates from its training colleges, technical and tertiary institutions. Despite the out-migration there was an increase in the proportion of the population aged 15 years and above that had completed tertiary education between 1998 and 2003. In the health sector, for example, Ghana is estimated to have lost about half of its nurses through migration out of the country in the last ten years Ghana. In 1999, 387 nurses left the country. The number that migrated rose to 1200 in 2001. It is estimated that there 1200 Ghanaian trained physicians in the USA, 300 in the United Kingdom, 150 in South Africa and 50 in Canada. Between 2002 and 2003 the Ministry of Health estimates that 5% of doctors left the country.⁴ This out-migration is important in explaining the education attainment profile of the population aged 15 years and above despite the large sums invested in education since 1983.

3.1.Population that has never attended school.

An examination of the distribution of the population that has never attended school reveals that the share of the population aged 6-14 years and 15-24 years that has never attended school is significantly lower than the population in the older age brackets. The decline in the proportion of the population that has never attended school as the age category decreases is suggestive of some success in policy efforts to increase access to education. It also reveals the advantage of having an expanding literate and educated adult population, i.e. an educated parent or guardian is likely to send the ward or child to school.

There is no significant difference between the proportion of the population that has never attended school in the age categories 6-14 years and 15-24 years. Gender gaps are not evident amongst the population in 6-14 age group. However, the gender gap widens in

⁴ Nyonator, F., D. Dovlo and K. Sagoe (2004) *The Health of the Nation and the Brain Drain in the Health Sector*.

subsequent age-categories. The rural-urban gap is significant and is fairly constant across the different age categories suggesting that although policy may have chalked some success in encouraging an increase in school attendance it has not been successful in addressing the factors that explain the rural-urban gap.

Table 2. Proportion of the Population Aged 15 years and above that has never been to school

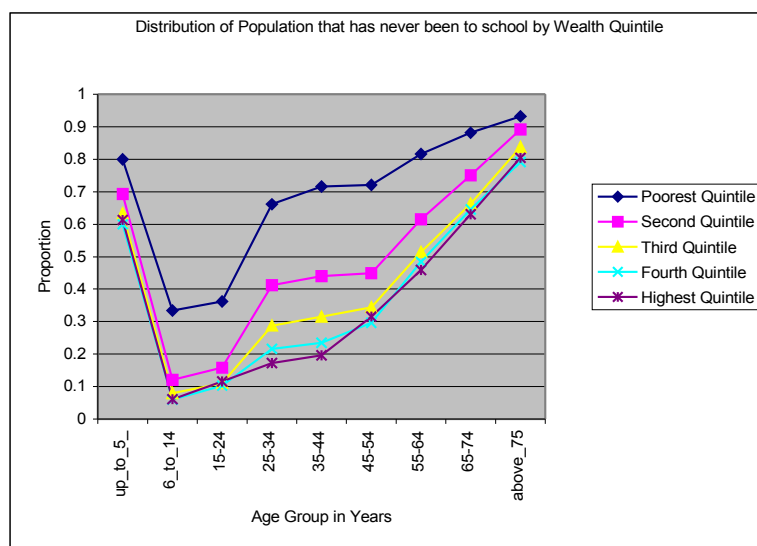
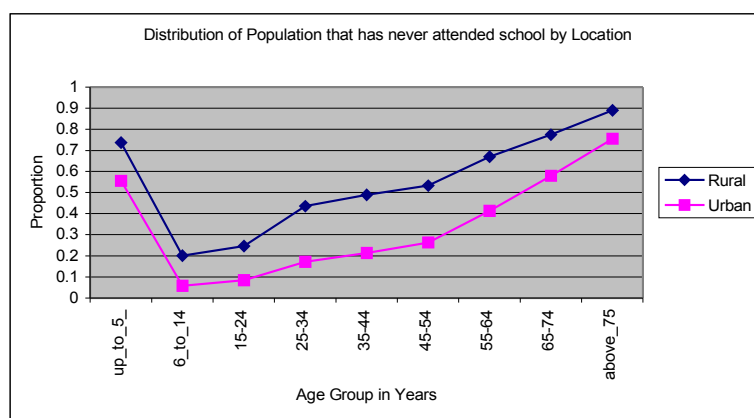
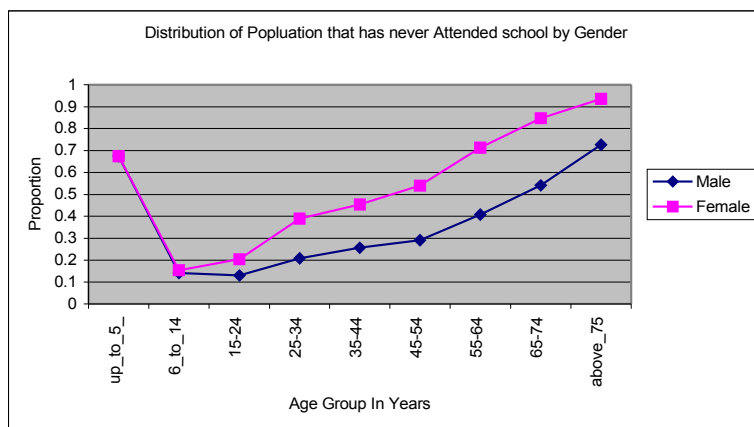
Age Category	Never been to school
Up to 5 years	0.67
6-14 years	0.15
15-24	0.17
25-34	0.31
35-44	0.36
45-54	0.42
55-64	0.56
65-74	0.70
above 75 years	0.84

Source: Calculated by the author using CWIQ 2003

Households in the lowest welfare quintile contain a significantly higher proportion of their members that has never been to school in comparison with households in the two highest welfare quintiles (Figure 1).⁵ In order to assess the relationship between poverty and educational outcomes, i.e. to explore how educational outcomes might impact on poverty it is necessary to examine the educational outcomes of the adult population. It can be safely assumed amongst this group that the current welfare status of the household has not influenced the educational attainment of the members of the household and that the line of causation runs from educational attainment to preset welfare status. Amongst the age groups 25-34 years, 35-44 years and 45-54 years, the difference in the proportion of the population that has never been to school is widest between the households in the lowest welfare quintile and households in the two highest welfare quintiles. Thus the information in the figure indicates that having no education can place an individual at a low level of welfare later in life.

Figure 1. Population that has never been to school

⁵ The welfare quintiles have been developed by the Ghana Statistical Services using variables that are close correlates of poverty. The poverty correlates that make up the welfare measure include household expenditure based on five key items, an asset score based on the ownership of eight different items, a dependency variable (the latter was included only for the rural estimates of the welfare measure), an ecological zone indicator and indicators of dwelling amenities.



Source: Calculated by the author using CWIQ2003

The region with the lowest proportion of the population aged 15 years and over that has never attended school is Greater Accra. In the three northern regions approximately 70% of the population aged 15 years and above have never attended school.

Table 3. Population Aged 15 years and above that has never been to school.

Region	Proportion
Western	0.299
Central	0.310
Greater Accra	0.141
Volta	0.343
Eastern	0.257
Ashanti	0.238
Brong-Ahafo	0.381
Northern	0.734
Upper East	0.714
Upper West	0.716

Source: Calculated by the author using CWIQ 2003

3.2.The Drop Out Population

It would appear from Table 1 that if a person should ever attend school, irrespective of the sex, the likelihood that the person will drop out of school is higher whilst in primary school and declines as one moves to higher levels of education. The primary school drop outs was the single highest category amongst the various drop out categories.

About 12% of the population aged 15 years and above had not completed a level of education (Table 4). When the sample is restricted to the section of the population that have attended school in the past, the proportion is 17.8%. Women are more likely than men not to complete a level of education. There is also a significant difference between the rural and urban population.

An examination of the drop out rate amongst different age categories can provide some evidence of the trend in the drop out rate over time. The drop out rate amongst the population aged 70 years and over is significantly higher than for the other age categories. This suggests a reduction in the incidence of dropping out approximately 50 years ago. However there is no significant change in the incidence of dropping out amongst the population less than 70 years. This suggests that policies may have been successful in getting children to start school but no significant headway has been made in ensuring that they remain in school.

Although a significantly higher proportion of the population in the three northern regions have never attended school, the drop out rate in these regions is not significantly different from that of regions such as Volta, Eastern, Central and Brong-Ahafo.

Table 4. The proportion of the Population aged 15 years and over that attended school but did not complete a level of education.

	Proportion that dropped out
Entire sample	0.179
Male	0.136
Female	0.228
Rural	0.233
Urban	0.134
Age category	
15-24 years	0.120
25-45 years	0.217
46-60 years	0.210
61-70 years	0.239
Over 70 years	0.276
Western	0.179
Central	0.209
Greater Accra	0.124
Volta	0.212
Eastern	0.211
Ashanti	0.179
Brong-Ahafo	0.199
Northern	0.153
Upper East	0.203
Upper West	0.152

Source: Calculated by the author using CWIQ 2003

The highest incidence of drop out occurs at the primary school level. This is confirmed for the sub-sample of the population aged 15 years and over that have attended school in the past but are no longer in school (Table 5). About 43% of the population aged 15 years and over that attended school in the past and did not complete a level of education did not complete primary school.

Table 5. Population aged 15 years and over that attended school in the past but did not complete a Level of Education

Education Level not completed and no longer in school	% of Population aged 15 years	Sub-sample of Drop outs (%)
Primary	5.06	42.90
Junior Secondary	2.12	17.90
Middle School	3.26	27.64
O Level	0.61	5.15
Senior Secondary	0.62	5.22
A Level	0.12	1.01

Source: Calculated by the author using CWIQ 2003

3.3. Enrolment Rates

Primary Enrolment Rates

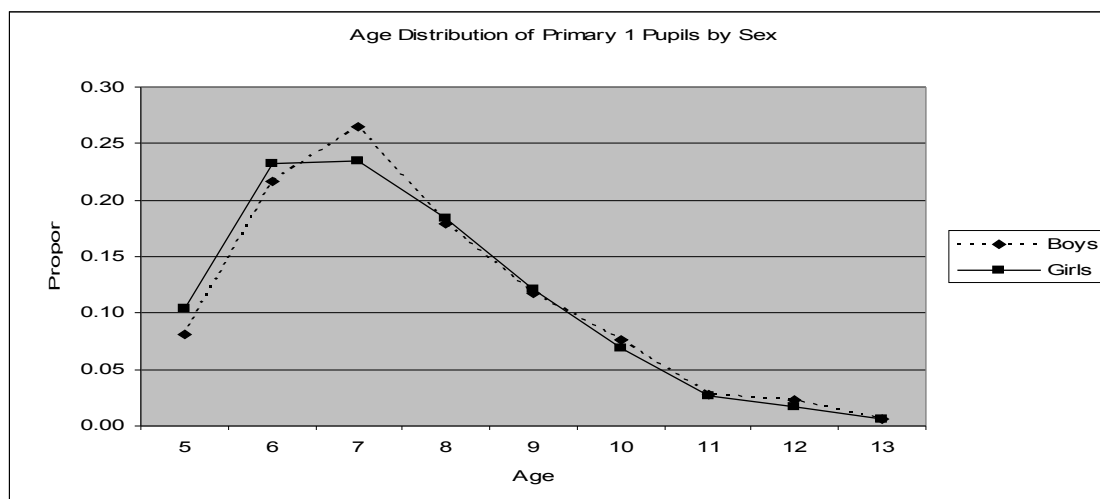
The net primary enrolment rate amongst girls is almost identical to that of boys (Table 6). Rural primary enrolment rates, though, are significantly lower than the urban rates. The welfare of the household appears to be a significant determinant of whether the child is enrolled in school. Net enrolment rates of children in the lowest welfare quintile are significantly lower than net enrolment rates for children in the two highest welfare quintiles. The three northern regions have the lowest net enrolment rates.

Net enrolment rates tend to be significantly lower than gross enrolment rates. This can be explained by late entry in primary school. The mean age of children in primary 1 in 2003 was about 7.5 years. Gross primary enrolment rates exceed unity or 100% because of the presence of over-aged children.

Junior Secondary Enrolment Rates

The net and gross junior secondary school enrolment rates are significantly lower than the primary rates largely because of the high drop out at primary school. The late age at which children enter primary school (Figure 4) and the likelihood that a not insignificant proportion of children will drop out of primary school can explain why the net junior secondary enrolment rate is so much lower than the net primary enrolment rate.

Figure 4. Age Distribution of Primary 1 Pupils by Sex



Source: Derived by the author using CWIQ 2003

The difference between net enrolment rates of boys and girls is not statistically significant. Net enrolment rates amongst rural children are estimated at 18% compared to 33% for urban children.

Table 6. Gross and Net Enrolment Rates

	Net Enrolment Rate	Gross Enrolment Rate
Primary		
Entire Sample	0.699	1.099
Boys	0.699	1.112
Girls	0.700	1.070
Rural	0.647	1.047
Urban	0.793	1.193
quintile==1	0.538	
quintile==2	0.706	
quintile==3	0.766	
quintile==4	0.797	
quintile==5	0.781	
Western	0.749	1.203
Central	0.726	1.147
Greater Accra	0.809	1.175
Volta	0.647	1.101
Eastern	0.756	1.202
Ashanti	0.789	1.163
Brong-Ahafo	0.693	1.152
Northern	0.499	0.811
Upper East	0.561	0.935
Upper West	0.511	0.791
Junior Secondary		
Entire Sample	0.264	0.706
boyjss	0.254	
girljss	0.275	
Rural	0.188	0.588
Urban	0.373	0.875
quintile==1	0.112	
quintile==2	0.220	
quintile==3	0.304	
quintile==4	0.360	
quintile==5	0.415	
Western	0.259	0.749
Central	0.277	0.763
Greater Accra	0.447	0.934
Volta	0.216	0.747
Eastern	0.272	0.721
Ashanti	0.337	0.772
Brong-Ahafo	0.192	0.653
Northern	0.094	0.377
Upper East	0.111	0.406
Upper West	0.133	0.480
Senior Secondary		
Entire Sample	0.129	0.293
Rural	0.054	0.156
Urban	0.219	0.459
Western	0.125	0.278
Central	0.122	0.234
Greater Accra	0.248	0.507
Volta	0.065	0.209
Eastern	0.122	0.254
Ashanti	0.337	0.772
Brong-Ahafo	0.192	0.652
Northern	0.094	0.377
Upper East	0.111	0.408
Upper West	0.133	0.480

Source: Ghana Statistical Service *CWIQ* 2003

Net enrolment rates amongst children in households in the lowest welfare quintile are significantly lower than rates for children in the higher welfare quintiles, suggesting that drop out rates are higher amongst this category of children.

The three northern regions have the lowest net and gross enrolment rates.

Senior Secondary Enrolment

Senior secondary enrolment rates are a fraction of primary and junior secondary enrolment rates. The rural net enrolment rate is 5% whilst the urban rate is 20%. The regional variation in enrolment rates is much less for this level of education compared to primary and junior secondary enrolment rates. Net and gross enrolment rates in the Greater Accra region rank second after Ashanti region. This pattern differs from that of the primary and junior secondary where enrolment rates were significantly higher than in many of the other regions.

3.4.Educational Attainment and Disability

Approximately 7% of the population aged 15 years and above have some form of disability. The education profile of this group of persons is different from the profile of the entire sample of persons aged 15 years and above largely because of the greater proportion of persons with disability that never attended school (Table 7). Over half the sample of persons with a disability had never attended school compared to about a third of the entire sample of persons aged 15 years and above.

Table 7. Education Profile of Persons with a Disability aged 15 years and above.

Level of Education Attained	Disabled	Entire Sample
Never been to school	52.84	33.90
Completed Pre-school	0.10	0.06
Did not complete Primary	5.90	7.15
Completed Primary	2.77	4.70
Did not complete Junior Secondary	1.94	6.37
Completed Junior Secondary	3.82	12.11
Did not complete Middle School	4.34	3.26
Completed Middle School	16.15	15.21
Completed Vocational/Technical School	2.89	2.54
Did not Complete Senior Secondary	1.03	4.69
Did not complete O Level	0.63	0.61
Completed Senior Secondary	1.56	1.71
Completed O Level	1.76	3.04
Did not complete A Level	0.14	1.58
Completed A Level	0.72	0.12
Completed Nursing/Teacher Training	1.72	0.67
Completed Tertiary	1.64	2.07

Source: Calculated by the author using CWIQ 2003

A lower proportion of the persons with disability had completed primary school and there is no significant difference between the proportions that had completed middle school. Less than 4% of the persons with a disability had completed junior secondary school

compared to 12% of the entire sample of persons aged 15 years and above. This can be explained partly by the different age profile of the two groups. About 9% of the persons with a disability fall within the 15-24 age group compared to 19% of the entire sample and 21% of the persons with disability are in the 25-45 age group compared to 27% of the entire sample. The new education system that introduced junior secondary schools began in 1987, thus a smaller proportion of the population aged 25-45 years would have gone through the new system compared to the 15-24 age group.

88% of the sample of disabled persons had middle school education or less compared to 83% of the entire population. It would therefore appear that for the disabled population the major risk they face is that of not attending school. Once they are given the chance to enter school the probability of completion does not appear to be significantly different from that of the entire sample. This is an issue that needs to be more rigorously investigated.

Table 8. Educational Attainment by Type of Disability for Persons aged 15 years and above.

	Seeing	Hearing/ Speech	Moving	No Feeling	Strange Behaviour	Fits	Learning	Other
Never been to school	49.52	62.76	58.51	56.90	47.67	53.97	30.07	50.67
Completed Pre-school	0.04	0.11	0.10	0.00	0.00	1.86	0.00	0.00
Did not complete Primary	4.74	5.83	6.82	9.72	10.93	15.96	15.69	8.70
Completed Primary	2.52	3.15	2.74	0.00	1.81	5.84	11.30	2.13
Did not complete Junior Secondary	1.57	3.35	1.50	1.41	2.05	6.05	21.71	4.01
Completed Junior Secondary	3.22	5.50	3.25	6.16	4.61	5.49	10.59	9.39
Did not complete Middle School	4.93	3.03	3.84	2.96	4.02	1.60	2.59	6.05
Completed Middle School	19.19	9.68	12.89	16.51	15.51	4.34	0.00	14.23
Completed Vocational/Technical School	3.43	1.54	2.70	1.13	1.83	0.31	0.00	1.44
Did not Complete Senior Secondary	1.09	1.04	0.79	0.00	1.41	0.97	4.15	1.44
Did not complete O Level	0.93	0.30	0.27	0.00	0.25	0.00	0.00	0.00
Completed Senior Secondary	1.50	1.88	1.51	1.21	2.25	0.59	2.73	0.28
Completed O Level	1.85	0.30	2.05	2.77	2.08	0.39	0.00	1.04
Did not complete A Level	0.22	0.00	0.07	0.00	0.00	0.00	0.00	0.00
Completed A Level	0.84	0.42	0.46	0.00	2.67	0.57	0.00	0.00
Completed Nursing/Teacher Training	2.25	0.66	1.33	1.21	0.41	0.00	0.00	0.63
Completed Tertiary	2.09	0.42	1.15	0.00	2.51	2.07	1.17	0.00

Source: Calculated by the author using CWIQ 2003

More than 60% of persons with a hearing or speech disability aged 15 years and above had never attended school. Except for persons with learning disabilities and strange behaviour, approximately half of the persons with other disabilities had never attended school. Persons with seeing disabilities and strange behaviour would appear to be the least disadvantaged in terms of educational attainment compared to the other groups of persons with disabilities. Whereas approximately 86% of this groups of persons had completed middle school or less, 93% of persons with hearing or speech disabilities and persons who had no feeling had attained middle school education or less and 95% of persons who suffered from fits or other disabilities had reached middle school or less.

4.0.Educational Attainment and Outcomes

4.1.Educational Attainment and Adult Literacy

The adult literacy rate in 2003 was 53.7% (Table 9). Less than 45% of the adult women in 2003 could read and write in any language. A significantly higher proportion of the urban population can read and write in any language compared to the rural population. The proportion of the population that is literate reduces as age increases. Individuals in the higher wealth quintiles were more likely to be able to read and write compared to those in the lower wealth quintiles.

Having attended school appears to be important in determining whether a person is literate (Table 9). However, unless a person has attained at least 9 years of education the probability that the person will be able to read and write in any language is less than 50%. The problem is more pronounced amongst the rural population.

Less than half of the rural and urban population aged 15 years and above who had completed primary school could read and write in any language (Table 10). Twenty percent of the population aged 15 years and above that had completed junior secondary education claimed they could not read or write in any language.

Table 9. Proportion of the population that can read and write in any language

Age-Group in Years	All	Men	Women
15-24	0.694	0.753	0.635
25-34	0.524	0.674	0.403
35-44	0.512	0.663	0.387
45-54	0.486	0.643	0.340
55-64	0.370	0.541	0.205
65-74	0.261	0.423	0.112
above_75	0.143	0.253	0.052
Rural	0.401		
Urban	0.699		
Quintile			
quintile==1	0.282		
quintile==2	0.480		
quintile==3	0.594		
quintile==4	0.635		
quintile==5	0.633		

Source: Calculated by author using CWIQ 2003

Table 10. Literacy by Educational Attainment

Education Level Completed	Entire Sample	Rural	Urban
Never attended school	0.012	0.008	0.021
Completed Pre-school	0.145	0.124	0.250
Incomplete Primary	0.273	0.247	0.328
Completed Primary	0.466	0.432	0.517
Incomplete Junior Secondary	0.808	0.771	0.851
Completed Junior Secondary	0.905	0.884	0.923
Incomplete Middle School	0.536	0.494	0.590
Completed Middle School	0.929	0.925	0.933
Completed Vocational/Technical	0.991	0.991	0.991
Incomplete Senior Secondary	0.987	0.979	0.990
Incomplete O Level	0.937	0.920	0.945
Completed Senior Secondary	0.997	0.993	0.999
Completed O Level	0.996	0.994	0.997
Incomplete A Level	0.990	1.000	0.988
Completed A Level	0.997	0.978	0.999
Completed Nursing/Teacher Training	0.997	1.000	0.996
Completed Tertiary	0.998	0.994	0.999

Calculated by the author using CWIQ 2003

The mismatch between ability to read and write and attendance at primary and/or junior secondary school raises issues about the quality of schooling. A study on schooling and household income in Ghana using data from the second Ghana Living Standards Survey conducted in 1988/89 finds that schooling is a significant determinant of performance in English and Mathematics tests. It also finds that English and Mathematics test scores are significant determinants of household income and off-farm income.⁶ Mathematics test scores were found to improve farm productivity.

4.2. Education Attainment and Sector of Employment

4.2.1. Employment Patterns

The agriculture sector still employs the largest proportion of workers although its importance as a source of employment is declining over time. During the time of the 2000 census 49.1% of the economically active population was employed in agriculture and related activities and 3% were employed in fishing. The CWIQ survey of 2003 estimates that approximately 44% was employed in agriculture in their main job (Table 11).

The data suggests that women have shifted out of agriculture as their main job at a faster rate than have men. In 2000 approximately 48% of economically active women aged 15 years and over were employed in agriculture and 2.6% employed in fishing. The proportion of men employed in agriculture was slightly higher at 49.9%. The CWIQ

⁶ Jolliffe, D. (1998) "Skills, Schooling and Household Income in Ghana" *World Bank Economic Review*, Vol. 12, No. 1, pp81-104.

estimates that a significantly lower proportion of women are employed in agriculture in 2003 compared to men. In terms of absolute numbers the agriculture sector employs more men in their main job compared to women.

Table 11. Sector of Employment in Main Job (2003)

	National			Rural			Urban	
	Men	Women	All	Men	Women	All	Men	Women
Agriculture/Forestry	50.1	39.6	44.6	73.2	59.8	66.3	18.6	12.6
Mining and Quarrying	1.6	0.2	0.9	1.4	0.3	0.8	1.9	0.2
Manufacturing	6.3	6.5	6.4	4.1	5.8	5.0	9.1	7.5
Construction	7.4	0.7	4.0	5.3	0.9	3.0	10.3	0.4
Transportation	5.2	0.4	2.7	2.7	0.2	1.4	8.5	0.7
Trading	7.4	36.2	22.4	3.3	25.4	14.7	13.0	50.7
Finance	9.9	5.5	7.6	4.4	2.6	3.5	17.4	9.4
Utilities	1.1	0.2	0.6	0.3	0.2	0.3	2.0	0.2
Community /Social Services	11.0	10.4	10.7	5.1	4.6	4.8	19.1	18.1

Source: CWIQ 2003

The single most important sector of employment for both men and women in the lowest welfare quintile is agriculture. Approximately 81% of men and 64% of women in the lowest welfare quintile are employed in agriculture (CWIQ 2003). A comparison of the sectors of employment of persons in the lowest and highest welfare quintiles reveals that a significantly lower proportion of persons in the highest welfare quintile is employed in agriculture. A greater proportion of both men and women in the highest welfare quintile are employed in the trading sector, finance and community and social services sectors compared to the proportions in the lowest welfare quintile.

The wholesale and retail trading sector is the second largest sector in terms of employment in the main job. The sector is largely dominated by women, particularly amongst the urban population. Entry into employment in agriculture and trading may be relatively easier compared to the other sectors because one does not need large amounts of capital to start up economic activity in the sector. Second the level of education and skills required to enter these sectors is relatively lower compared to for example the finance sector and social services, i.e. education and health.

4.2.2. Educational Attainment and Employment Outcomes – Population that is no longer in school.

Approximately 64% of the population aged 15 years and above that is no longer in school worked in 2003 (Table 12). A person is classified as unemployed if the person is not working and is looking and is available for work. The CWIQ 2003 survey has a reference period of 7 days to identify if a person is working or not working. Using this definition 5.35% of the population aged 15 years and above and who are no longer in school were unemployed. The remaining 27.87% were not working and were not looking for work.

Table 12. Employment Status of Population Aged 15 years and above who are not in School.

Employment Status	Proportion
Labour force, i.e. employed and unemployed	0.691
Working in last 7 days	0.637
Unemployed in last 7 days	0.054
Not employed and not looking for work	0.278

Calculated by the author using CWIQ 2003

Employment

Over 60% of the population aged 15 years and above that have never been to school are employed in agriculture (Table 13). Amongst the population that did not complete a level of education, a declining proportion is employed in agriculture as one is able to move up the education ladder.

A similar pattern may be observed for the sample of the population aged 15 years and over that has completed different levels of education. For all categories of education except the A level completer, a significantly lower proportion of completers are employed in agriculture as their main job compared to the population that did not complete a level of education (Table 13 and 14). Thus even though agriculture is the sector employing the largest single proportion of the population, it is not the sector of choice as the education level completed rises.

The likelihood of employment in the finance/insurance/service sector increases with the level of education attained. Whereas less than 2 % of the population aged 15 years and above that has never attended school are employed in this sector, the proportion rises to just over 8% for the population that did not complete SSS (Table 13), 31% for the sub-sample that completed A Level and 40% for the sub-sample of tertiary completers (Table 14). A similar pattern emerges for employment in the community and social services sector. These patterns are not surprising since employment in the finance sector for example requires specific qualifications and skills.

Several studies on the determinants of poverty in Ghana have found a significant relationship between household consumption expenditure and the education levels of members of the household.⁷ The more educated the household head or the members of the household are the less likely it is that the members of the household will be below the poverty line. What the regression analysis does not provide information on is the channels through which education impacts on poverty. If low educational attainment is an important push factor into the agriculture sector, then this is one channel whereby educational attainment impacts on poverty and welfare.

⁷ Glewwe, P.K. and K.A. Twum-Baah (1991). *The Distribution of Welfare in Ghana 1987-88* LSMS Working Paper No. 75, The World Bank, Washington D.C.; Seini, A.W., V.K. Nyanteng and G.J.M. van den Boom (1997). "Income and Expenditure Profiles and Poverty in Ghana", in *Sustainable Food Security in West Africa*, ed. by W.K. Asenso-Okyere, G. Benneh and W. Tims, Kluwer Academic Publishers, Dordrecht.

Table 13. Distribution of Employment in the Main Job for Population that did not complete a Level of Education

	Never Attended School	Primary drop out	JSS drop out	Incomplete Middle school	SSS dropout	A Level Drop out
Agriculture, Forestry & Fishing	64.25	52.29	40.18	49.95	27.40	10.02
Mining and Quarrying	0.44	0.73	1.47	0.35	2.31	0.00
Manufacturing	4.29	5.62	9.25	4.05	8.11	12.07
Construction	2.08	3.81	5.09	3.34	7.52	0.66
Transport	0.97	2.30	3.81	2.05	4.12	2.86
Trading	22.54	25.17	25.03	29.90	21.68	12.48
Finance/Insurance/Services	1.46	2.91	4.26	3.29	8.35	31.25
Utilities	0.21	0.47	0.48	0.28	1.02	0.00
Community/Social Services	3.77	6.67	10.43	6.73	19.48	30.68

Calculated by the author using CWIQ 2003

Table 14. Distribution of Employment in the Main Job for Population that Completed a Level of Education

	Primary Completer	Completed JSS	Completed Middle School	Completed SSS	Completed Vocational/ Technical	Completed O Level	Completed A Level	Completed Nursing/Teach er Training	Completed Tertiary
Agriculture, Forestry & Fishing	47.65	26.36	38.71	14.82	15.56	15.42	9.09	4.84	6.89
Mining and Quarrying	1.03	0.72	1.37	1.24	1.88	1.86	1.41	0.46	3.61
Manufacturing	6.36	15.50	6.17	8.47	7.99	7.18	4.88	0.37	3.14
Construction	2.93	8.11	4.45	6.09	7.18	5.66	4.12	0.50	3.31
Transport	2.22	5.43	4.01	4.90	2.94	4.68	6.05	0.36	3.40
Trading	28.40	17.60	25.26	22.14	21.76	23.94	16.04	2.13	8.11
Finance/Insurance/Services	3.04	8.71	8.20	18.88	19.59	21.72	31.63	39.32	40.16
Utilities	0.52	1.38	0.64	1.09	2.23	1.40	0.50	0.26	1.62
Community/Social Services	7.83	16.17	11.16	22.37	20.84	18.14	26.29	51.76	29.76

Source: Estimated by the author using CWIQ 2003

Unemployment

There is no significant difference between the proportion of men and women that were unemployed in the population aged 15 years and above that was no longer in school in 2003 (Table 15). The proportion of the urban population that was unemployed in 2003 is significantly higher than the proportion of the rural population.

Table 15. Proportion of the Population aged 15 years and above that is Unemployed by Educational Attainment.

	All	Men	Women	Rural	Urban
Entire Sample	0.054	0.051	0.056	0.035	0.076
Never been to school	0.044	0.043	0.044	0.035	0.065
Completed Pre-school	0.055	0.000	0.100	0.000	0.291
Did not complete primary	0.059	0.055	0.062	0.036	0.105
Completed Primary	0.062	0.050	0.070	0.038	0.099
Did not complete JSS	0.095	0.070	0.111	0.065	0.138
Completed JSS	0.109	0.100	0.117	0.080	0.136
Did not complete Middle school	0.045	0.043	0.046	0.021	0.075
Completed Middle school	0.040	0.034	0.049	0.017	0.060
Completed Vocational/Technical	0.072	0.066	0.081	0.045	0.080
Did not complete SSS	0.100	0.101	0.099	0.052	0.135
Did not complete O Level	0.074	0.079	0.068	0.045	0.089
Completed SSS	0.174	0.176	0.170	0.118	0.192
Completed O Level	0.053	0.051	0.059	0.030	0.061
Did not complete A Level	0.032	0.015	0.068	0.046	0.029
Completed A Level	0.069	0.067	0.075	0.000	0.079
Completed Nursing/Teacher Training	0.005	0.005	0.005	0.004	0.006
Completed Tertiary	0.078	0.080	0.071	0.068	0.080

Source: Estimated by the author using CWIQ 2003

The proportion of the population that never went to school that is unemployed is significantly lower than amongst several other population sub-samples. The incidence of unemployment is highest amongst Senior Secondary School and Junior Secondary School completers. The incidence of unemployment amongst the tertiary completers is higher than amongst those who never attended school. The lowest incidence of unemployment is amongst the population that completed nursing/teacher training and agriculture college. This pattern of unemployment would suggest that educational attainment may not be important in explaining whether a person will be unemployed at a point in time. However, educational attainment appears to be important in explaining which sector the person may be employed in. The patterns between education attainment and unemployment suggest that several years of schooling is no guarantee of employment.

Underemployed

Approximately 30% of the population aged 15 years and above worked 35 hours or less in their main job. Approximately 90% of this population has one job. This suggests that a not insignificant proportion of the population may be underemployed. The underemployed are defined in this paper as persons who are working and are available to work additional hours. Approximately 13% of the population aged 15 years and above and who were no longer in school at the time of the survey were underemployed.

The incidence of underemployment was highest amongst persons who had not completed middle school and persons who had not completed senior secondary. It was lowest amongst persons who had completed tertiary education.⁸

Table 16. Underemployment

⁸ The group of persons who had only completed pre-school had the lowest incidence of underemployment. However they make up a minuscule proportion of the population.

Level of Educational Attainment	Proportion
Never been to school	0.104
Completed Pre-school	0.058
Did not complete primary	0.160
Completed Primary	0.155
Did not complete JSS	0.146
Completed JSS	0.123
Did not complete Middle school	0.204
Completed Middle school	0.170
Completed Vocational/Technical	0.144
Did not complete SSS	0.196
Did not complete O Level	0.188
Completed SSS	0.089
Completed O Level	0.152
Did not complete A Level	0.092
Completed A Level	0.136
Completed Nursing/Teacher Training	0.113
Completed Tertiary	0.079

Source: Estimated by the author using CWIQ 2003

Economically Inactive

About 28% of the population aged 15 years and above that was not in school was not working or looking for work in 2003. The proportion that may be described as economically inactive was highest amongst the population aged over 70 years. The proportion of the population that was inactive was lowest amongst the age groups 25-45 years and 46-60 years. There was no significant rural-urban or gender difference in the incidence of the economically inactive population (Table 17)

Senior Secondary School completers have the highest proportion of persons not working or looking for work. This may be explained partly by the one year period between completion of senior secondary school and entry into tertiary institutions. The group that has never attended school has the highest incidence of economic inactivity after the senior secondary completers. Thus excluding the senior secondary school completers the incidence of economic activity tends to be lower amongst persons that have at least completed A Levels (Table 17).

Table 17. Proportion of Population aged 15 years and above and not in School, and that is not working or Looking for Work.

	Proportion Inactive
Age Category	
15-24 years	0.540
25-45 years	0.109
46-60 years	0.127
61-70 years	0.316
Over 70 years	0.606
Men	0.268
Women	0.286
Urban	0.268
Rural	0.286
Level of Educaiton Attained	
Never been to school	0.233
Completed Pre-school	0.200
Did not complete primary	0.144
Completed Primary	0.144
Did not complete Junior Secondary	0.199
Completed Junior Secondary	0.191
Did not complete Middle school	0.107
Completed Middle school	0.085
Completed Vocational/	0.126
Did not complete Senior Secondary	0.162
Did not complete O Level	0.138
Completed Senior Secondary	0.300
Completed O Level	0.078
Did not complete A Level	0.128
Completed A Level	0.091
Completed Nursing/Teacher Training	0.078
Completed Tertiary	0.094

Source: Estimated by the author using CWIQ 2003

With the exception of the sample of persons who had never attended school the most frequent reason given for not working in the last 7 days is the difficulty in getting a job (Table 18). This group of persons may be described as discouraged workers – they are not working because they cannot find a job and are no longer looking for a job. More than half of the tertiary completers who were economically inactive were discouraged workers. An insignificant proportion were not working or looking for a job because their job was seasonal. It may be inferred from this that they are not looking for a job because they expect demand for their services to pick up once the season returns. Amongst the group who had completed nursing/teacher training the most frequent given reason why they were not working was because of their age. This is not a surprising considering that this group of persons have the lowest unemployment rate and the lowest proportion of the economically inactive.

Table 18. Reasons for not working in Last 7 days

	No work available	Seasonal Activity	Household Family Duties	Too old/young	Infirmity	Disability	Other
Educational Attainment							
Never Attended School	0.139	0.276	0.182	0.205	0.087	0.057	0.054
Incomplete Primary	0.349	0.107	0.246	0.046	0.083	0.054	0.116
Completed Primary	0.379	0.085	0.264	0.036	0.080	0.034	0.124
Incomplete Junior Secondary	0.446	0.078	0.277	0.007	0.028	0.012	0.152
Completed Junior Secondary	0.462	0.061	0.253	0.000	0.024	0.004	0.196
Incomplete Middle School	0.337	0.135	0.181	0.096	0.124	0.052	0.074
Completed Middle School	0.337	0.134	0.151	0.136	0.113	0.061	0.067
Completed Vocational/Technical	0.437	0.123	0.153	0.102	0.034	0.032	0.120
Incomplete Senior Secondary	0.453	0.165	0.240	0.011	0.035	0.025	0.070
Incomplete O Level	0.439	0.135	0.163	0.100	0.071	0.011	0.082
Completed Senior Secondary	0.487	0.062	0.201	0.001	0.007	0.003	0.239
Completed O Level	0.408	0.125	0.111	0.208	0.028	0.054	0.066
Incomplete A Level	0.200	0.000	0.117	0.248	0.098	0.074	0.263
Complete A Level	0.359	0.117	0.107	0.146	0.026	0.113	0.133
Completed Nursing/Teacher Training	0.052	0.080	0.118	0.461	0.078	0.035	0.177
Completed Tertiary	0.553	0.083	0.083	0.142	0.018	0.020	0.101

Source: Estimated by the author using CWIQ 2003

4.3. Educational Attainment and Health

4.3.1. Attendance at Ante – and Post-Natal Clinic

Attendance at pre-natal clinics is high irrespective of the level of the educational attainment of the mother (Table 19). Despite this high level of attendance a clear pattern exists between the education of the mother and whether she attended ante-natal clinic. All mothers who had at least some senior secondary education attended post-natal clinic. The group of mothers with the lowest attendance was those who had never attended school.

Attendance at post-natal clinic is lower than ante-natal attendance (Table 19). Again a pattern is evident where mothers who had at least completed O Level education were more likely to have attended post-natal clinic.

4.3.2. Consultation of Health Personnel and Use of Health Facilities

No clear pattern emerged between educational attainment and whether a health worker is consulted for any reason (Table 20).

The health facility or medical person that will be consulted when a person falls ill is determined by several factors such as distance to the nearest facility, the cost of consultation, income of the person or household and education. The single most frequent health facility that was visited across the different levels of education for the population aged 15 years and above was the public hospital (Table 21). Next in importance was the pharmacist or drug store. Persons who had completed tertiary education were less likely to consult a pharmacy or drugstore compared to persons in the other education level categories. Compared to the population that had never been to school and those that had completed pre-school persons with some level of education were less likely to consult a

traditional healer (Table 21). The probability of consulting a pharmacist/drugstore is lower the higher the level of education.

Table 19. Educational Attainment and Attendance at Pre-Natal and Post-Natal Clinics

	Received	
	Pre-natal	Post-natal
Never been to school	0.895	0.751
Completed Pre-school	1.000	0.509
Did not complete primary	0.939	0.783
Completed Primary	0.966	0.823
Did not complete Junior Secondary	0.938	0.846
Completed Junior Secondary	0.972	0.861
Did not complete Middle school	0.938	0.796
Completed Middle school	0.989	0.886
Completed Vocational/	0.980	0.883
Did not complete Senior Secondary	0.959	0.957
Did not complete O Level	1.000	0.771
Completed Senior Secondary	1.000	0.899
Completed O Level	1.000	1.000
Did not complete A Level	1.000	1.000
Completed A Level	1.000	1.000
Completed Nursing/Teacher Training	1.000	0.954
Completed Tertiary	1.000	1.000

Source: Estimated by the author using CWIQ 2003

Table 20. Consultation of Health Personnel in Last 4 weeks for Any Reason by Educational Attainment

	Proportion
Never been to school	0.224
Completed Pre-school	0.200
Did not complete primary	0.206
Completed Primary	0.190
Did not complete Junior Secondary	0.130
Completed Junior Secondary	0.154
Did not complete Middle school	0.263
Completed Middle school	0.220
Completed Vocational/	0.196
Did not complete Senior Secondary	0.148
Did not complete O Level	0.235
Completed Senior Secondary	0.127
Completed O Level	0.191
Did not complete A Level	0.273
Completed A Level	0.177
Completed Nursing/Teacher Training	0.223
Completed Tertiary	0.168

Source: Estimated by the author using CWIQ 2003

Table 21 Health Facility/Provider Consulted by Level of Educational Attainment

Level of Education	Private Hospital/ Clinic	Public Hospital/ Clinic	Community Health Centre	Private doctor/denti st	Traditional Healer	Missionary Hospital	Pharmacist/ drug store	Other
Never been to school	0.109	0.404	0.015	0.007	0.087	0.043	0.327	0.007
Completed Pre-school	0.094	0.200	0.029	0.000	0.213	0.000	0.408	0.056
Did not complete primary	0.123	0.371	0.015	0.009	0.070	0.039	0.365	0.009
Completed Primary	0.120	0.399	0.016	0.006	0.043	0.045	0.367	0.004
Did not complete Junior Secondary	0.125	0.392	0.021	0.008	0.051	0.036	0.363	0.004
Completed Junior Secondary	0.181	0.391	0.014	0.007	0.043	0.031	0.329	0.005
Did not complete Middle school	0.147	0.414	0.010	0.009	0.060	0.032	0.324	0.005
Completed Middle school	0.164	0.403	0.010	0.010	0.042	0.036	0.332	0.004
Completed Vocational/	0.244	0.415	0.003	0.021	0.024	0.023	0.268	0.002
Did not complete Senior Secondary	0.253	0.432	0.012	0.015	0.023	0.036	0.230	0.000
Did not complete O Level	0.241	0.400	0.000	0.010	0.050	0.013	0.283	0.003
Completed Senior Secondary	0.183	0.474	0.011	0.011	0.020	0.037	0.263	0.001
Completed O Level	0.197	0.408	0.006	0.019	0.032	0.025	0.312	0.000
Did not complete A Level	0.264	0.377	0.000	0.000	0.026	0.000	0.333	0.000
Completed A Level	0.275	0.363	0.009	0.015	0.032	0.022	0.284	0.000
Completed Nursing/Teacher Training	0.136	0.511	0.003	0.025	0.023	0.052	0.251	0.000
Completed Tertiary	0.326	0.418	0.000	0.010	0.019	0.026	0.202	0.000

Source: Estimated by the author using CWIQ 2003

4.3.3. Educational Attainment of the Mother and Child Health

The health of the child is determined by three major sets of variables. The first is the health and nutritional inputs provided the child by the household. The second is the local health environment the child lives in and the third is the child's health endowment.⁹ The education of the mother is a subset of the first set of factors and can itself impact on child health in a number of ways.¹⁰ Schooling may provide mothers with information on effective health care. Reading skills obtained through schooling will make it possible for mothers to read on child care literature. Finally, educated mothers will be able to read instructions and therefore administer nutritional and health inputs more effectively. These are some of the positive impacts of mother's education on child health. On the other hand the opportunity cost of the time of the educated mother may be higher than that of the uneducated mother. The former may therefore spend less time on child care, delegating it to others unsupervised, and this could compromise the child's health.

Table 22 provides information on the proportion of children that are stunted and the proportion that is underweight by the educational attainment of their mothers. The relationship between mother's education and child health indicators is not clear cut. The difference in the proportion of mothers with tertiary education who have stunted children is not significantly different from the proportion of mothers who only completed pre-school or mothers who did not complete primary education. What the table reveals though is that not having ever attended school may create a disadvantage.

Table 22. Proportion of Stunted and Underweight Children

⁹ Glewwe, P and J. Desai (1999) Child Health and Mother's Education in Ghana in *The Economics of School Quality Investments in Developing Countries. An Empirical Study of Ghana*. P. Glewwe, J. Desai, D. Jolliffe, R. Oliver and W. Vijverberg (eds), Centre for the Studies of African Economies, Oxford.

¹⁰ For a discussion on this see the Glewwe et al, 1999.

Educational Attainment of Mother	Proportion with	
	Stunted children	Underweight children
Never been to school	0.347	0.259
Completed Pre-school	0.295	0.437
Did not complete primary	0.301	0.232
Completed Primary	0.344	0.267
Did not complete Junior Secondary	0.351	0.241
Completed Junior Secondary	0.317	0.258
Did not complete Middle school	0.316	0.266
Completed Middle school	0.288	0.272
Completed Vocational/Technical	0.283	0.229
Did not complete Senior Secondary	0.243	0.235
Did not complete O Level	0.158	0.208
Completed Senior Secondary	0.226	0.250
Completed O Level	0.213	0.288
Did not complete A Level	0.000	0.000
Completed A Level	0.337	0.373
Completed Nursing/Teacher Training	0.206	0.341
Completed Tertiary	0.281	0.154

Notes: Stunting measures height for age

Underweight measures weight for age

Source: Estimated by the author using CWIQ 2003.

The relationship between mother's education and underweight children is also not very precise. In this case however, having a mother who has tertiary level education confers some advantage on the child. Only 15% of children who have mother's educated to the tertiary level are underweight. This analysis however, does not control for the income of the household, the location of the household and other innate characteristics of the mother. A multi regression analysis conducted using data from the second Ghana Living Standards Survey (1988/89) controlling for the age, location, height of parents, father's education and mother's tests scores did not find a significant relationship between mother's education and stunting or between mother's tests scores and stunting. In a regression with child's weight for height as the dependent variable the mother's mathematics score was significant in explaining the child's weight for height score. The reading test score is not significant. It is necessary to investigate in more detail the channels whereby education is expected to impact positively on child health.

5.0.Conclusion

This survey of patterns in educational attainment in Ghana has found that a significant proportion of the population aged 15 years and above has never attended school and that in some regions the proportion that has never attended school increased between 1998 and 2003. Significant gender and location differences persist. Women are less likely to have attended school and are more likely to drop out of school compared to men and a rural person is less likely to have attended school and more likely to drop out of school compared to an urban person. The disabled are less likely to attend school and this is one of the greatest differences in their educational attainment profile compared to the profile for the entire sample.

About half of the adult population as defined in this paper has less than nine years of education. The education attainment profile does not reflect the considerable quantum of resources that has been allocated to education over the years. A factor that will explain the education attainment profile is migration. Ghana has not been successful in retaining its graduates from the training colleges, technical schools and tertiary institutions and this is an important determinant of the education attainment profile.

The highest incidence of dropping out of school occurs at the primary level. Considering that about half the primary school completers cannot read or write in any language, poor quality of education may explain the high drop out rate.

The patterns between education attainment and unemployment suggest that several years of schooling is no guarantee of employment. Apart from the senior secondary completers the incidence of unemployment amongst tertiary completers and the products of technical and vocational institutions are amongst the highest. This raises questions about the link between education policy and the economic and development strategy. Do the outputs of the technical, vocational institutions and the tertiary institutions have the requisite skills?

A clear pattern seems to emerge between educational attainment and employment in some sectors. Persons with little or no formal education tend to be concentrated in the agriculture sector. On the other hand the expanding sectors of the economy, i.e. finance, insurance and the ICT sectors do not tend to employ persons with low levels of educational attainment. The low level of skills and general education amongst the adult Ghanaian population will pose a constraint on the evolution to a modern middle-income society.

Educational attainment is positively correlated with the welfare of the household or individual. Amongst the population aged 15 years and above households in the two lowest welfare quintiles have a higher concentration of persons with no formal education and below middle school education than do households in the higher welfare quintiles. Since most of this population are no longer in school the line of causation runs from education to welfare. This positive relationship between the level of educational attainment and welfare is confirmed in previous studies on the determinants of welfare that use more rigorous methods of analysis and the patterns identified in this study suggests a similar relationship.

Studies using the second Ghana Living Standards Survey find that cognitive skills are significant determinants of household income. Thus a schooling system that transfers the relevant skills is important in improving household incomes and should contribute positively to poverty reduction. The high incidence of illiteracy amongst persons with at least six years of education points to inefficiency and ineffectiveness in the use of resources committed to the education sector. This problem must be addressed. In addition, as much as possible a tighter link should be developed between education policy and the development strategy of the country to ensure that the acquired skills yield the greatest benefit to the individual and to the country.

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